

224



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,922	03/27/2001	D. Amnon Silverstein	10992483	4275

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HEWLETT-PACKARD COMPANY  
 Intellectual Property Administration  
 P.O. Box 272400  
 Fort Collins, CO 80527-2400

EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/818,922	<b>Applicant(s)</b> SILVERSTEIN, D. AMNON	
	<b>Examiner</b> LUONG T NGUYEN	<b>Art Unit</b> 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03/27/01 and 02/14/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species II (Figure 6) read on claims 4-9 and 11-15 in the reply filed on 8/16/2004 is acknowledged.
2. Claims 1-3 and 10 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim.

### ***Claim Objections***

3. Claims 11-14 are objected to because of the following informalities:  
Claim 11 (lines 5, 7), "a sensor" should be changed to --the sensor--.  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (US 5,940,126).

Regarding claim 9, Kimura discloses a method of capturing a left image and a right image of a scene, the method comprising focusing light from a left lens system (lens 5L, figure 5, column 5, lines 33-45) on a sensor array (charge-coupled device 520, figure 5, column 5, lines 33-45); capturing, using the sensor array, the left image at a first instant in time (figure 5, column 5, lines 33-45); focusing light from a right lens system (lens 5R, figure 5, column 5, lines 33-45) on the sensor array (charge-coupled device 520, figure 5, column 5, lines 33-45); capturing, using the sensor array, the right image at a second instant in time using the sensor array (figure 5, column 5, lines 33-45).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 9, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (US 2001/0004298).

Regarding claim 9, Kobayashi discloses a method of capturing a left image and a right image of a scene, the method comprising focusing light from a left lens system (lens unit G1L, figure 1, section [0038]) on a sensor array (image plane FP, figure 1, sections [0038], [0039]); capturing, using the sensor array, the left image at a first instant in time (figure 1, sections [0038]); focusing light from a right lens system (lens unit G1R, figure 1, section [0038]) on the sensor array (image plane FP, figure 1, sections [0038], [0039]); capturing, using the sensor

Art Unit: 2612

array, the right image at a second instant in time using the sensor array (figure 1, sections [0038]).

Regarding claim 15, Kobayashi discloses the left light is focused on the sensor array by a polarization beam combiner and a polarization filter (figure 1, section [0006]).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 5,940,126) in view of Kobayashi (US 2001/0004298).

Regarding claim 4, Kimura discloses a camera comprising a left lens (lenses 5L, figure 5, column 5, lines 33-45); a right lens (lenses 5R, figure 5, column 5, lines 33-45); a light sensor array (charge-coupled device 520, figure 5, column 5, lines 33-45).

Kimura fails to specifically disclose a polarizing beam splitter for combining the light from the left lens system and light from the right lens system; and a polarization filter for selecting light from the left lens system and light from the right lens system.

However, Kobayashi teaches an optical system for photographing stereoscopic image, which includes a polarized beam splitter and a polarizing filter (sections [0006], [0007], [0010]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

Art Unit: 2612

was made to modify the device in Kimura by the teaching of Kobayashi in order to provide a stereoscopic image photographing optical system which has high optical performance without color unevenness and is capable of easily obtaining a good stereoscopic image (section [0013]).

Regarding claim 5, Kimura discloses a sensor array (charge-coupled device 520, figure 5, column 5, lines 33-45).

Regarding claim 6, Kobayashi discloses the polarization filter is a liquid crystal window (section [0071]).

Regarding claim 7, Kobayashi discloses a control unit for causing the polarization filter to select between light from the left lens system and light from the right lens system (Kobayashi discloses the polarizing filter is rotated to change amounts of light based on left and right parallax images, so that light beams passing respectively through optical paths for the right and left parallax images are alternately led to the image sensor. Therefore, a control unit is inherently included in the system for causing the polarization filter select optical light paths, section [007]).

Regarding claim 8, all the limitations are contained in claim 4, therefore, see Examiner's comment regarding claim 4.

10. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (US 2001/0004298) in view of Carter (US 4,761,066).

Art Unit: 2612

Regarding claim 11, Kobayashi discloses a method of capturing a left image and a right image of a scene, the method comprising directing left polarized light from a left lens system (lens unit G1L, figures 1, 7, sections [0038], [0063], [0064]) on a sensor array (image plane FP, figure 1, sections [0038], [0039]); directing right polarized light from a right lens system (lens unit G1R, figures 1, 7, sections [0038], [0063], [0064]) on the sensor array (image plane FP, figure 1, sections [0038], [0039]); selecting the left polarized light to capture the left image using the sensor array (section [007]); selecting the right polarized light to capture the right image using the sensor array (section [007]).

Kobayashi fails to specifically disclose the light polarized in a second direction, orthogonal to the first direction. However, Carter teaches a stereoscopic optical system, in which the light rays 44 and 46, after pass through filters 38 and 40, respectively, are polarized in directions 52 and 54, respectively; the directions 52 and 54 are mutually orthogonal polarization directions (figures 2-3, column 5, lines 19-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kobayashi by the teaching of Carter in order to produce perspective components characterized by mutually orthogonal linearly polarized light. This allows the perspective components to be viewed exclusively (column 2, lines 25-33).

Regarding claim 12, Kobayashi discloses a switchable polarization filter selects the left polarized light (section [007]).

Regarding claim 13, Kobayashi discloses combining the left polarized light and the right polarized light (combining optical element P, figure 1, section [0038]).

Art Unit: 2612

Regarding claim 14, Kobayashi discloses a polarized beam splitter combines the left polarized light and the right polarized light (combining optical element P, figure 1, sections [0010], [0038]).

### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wolff (US 5,557,324) discloses polarization viewer.

Chikazawa (US 6,038,071) discloses apparatus for recording a stereoscopic image.

Toh (US 6,346,965) discloses high resolution imaging system for simultaneous acquisition of two high aspect ratio object fields.

Weissman et al. (US 6,624,935) discloses single-axis stereoscopic video imaging system with centering capability.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T NGUYEN whose telephone number is (703) 308-9297. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN *LN*  
09/19/04

  
NGOC-YEN VU  
PRIMARY EXAMINER